

# Northern Michigan University

## College of Arts and Sciences

### *Department of Mathematics and Computer Science*

## Computer Science Major



<i>Name:</i>	<i>Date:</i>
<i>NMU IN:</i>	<i>Advisor:</i>
<i>Major: Computer Science</i>	<i>Minor:</i>

# *Computer Science Major*

## *124 Credits*

<i>Major (51 Credits)</i>	<i>Credits</i>	<i>Transfer Credits</i>	<i>NMU Credits</i>
<i>Computer Science Core</i>	43		
CS120 Computer Science I [V] or CS120A [Div. V]	4		
CS122 Computer Science II	4		
CS201 Programming in C++	3		
CS222 Data Structures	4		
CS228 Network Programming	3		
CS322 Principles of Programming Languages	4		
CS326 Object-Oriented Design	3		
CS330 Microcomputer Architecture	4		
CS422 Algorithms: Design & Analysis	3		
CS426 Operating Systems	3		
CS442 Advanced Networking	4		
CS480 Senior Project in Computer Science	4		
<i>CIS, CS, and MA Electives</i> Choose from the following:	8		
<ul style="list-style-type: none"> <li>• CIS464 Database Management Systems (4 Crs.)</li> <li>• CS courses numbered 300 or higher, excluding those with middle digit "5" (1-6 Crs.)</li> <li>• MA courses numbered 265 or higher except MA271, MA331, MA484 and math courses with middle digit "5". (1-6 Crs.)</li> </ul>			
<i>*Other Requirements (Mathematics)</i>	20		
MA161 Calculus I [III]	5		
MA163 Calculus II	4		
MA211 Intro to Matrix Theory Linear Algebra	3		
MA240 Discrete Mathematics	4		
Choose from the following:	4		
<ul style="list-style-type: none"> <li>• MA171 Introduction to Probability &amp; Statistics (4 Crs.)</li> <li>• MA310 Mathematical Models &amp; Problems (4 Crs.)</li> <li>• MA380 Linear Programming (3 Crs.)</li> <li>• MA381 Integer Programming &amp; Network Flows (3 Crs.)</li> <li>• MA410 Mathematical Modeling (3 Crs.)</li> <li>• MA473 Numerical Analysis (4 Crs.)</li> </ul>			

\*Other Requirements (Mathematics) may be declared as a mathematics minor.

# *Physical Education*

	<i>Physical Education (2 Credits)</i>	<i>Transfer Credit</i>	<i>NMU Credit</i>

# *Minor*

<i>*Minor (20 Credits)</i>	<i>Transfer Credits</i>	<i>NMU Credits</i>

\*Other Requirements (Mathematics) under major core requirements may be declared as a mathematics minor.

# *Electives*

<i>Electives (11 Credits)</i>	<i>Transfer Credits</i>	<i>NMU Credits</i>

# *Liberal Studies*

	<i>Liberal Studies (30 - 40 Credits)</i>	<i>Transfer Credit</i>	<i>NMU Credit</i>
<b><i>I</i></b>	<b><i>Composition (8 Credits)</i></b>		
<b><i>II</i></b>	<b><i>Humanities (8 Credits)</i></b>		
<b><i>III</i></b>	<b><i>Mathematics/Natural Science (8 Credits)</i></b>		
<b><i>IV</i></b>	<b><i>Social Science (8 Credits)</i></b>		
<b><i>V</i></b>	<b><i>Formal Communications (4 Credits)</i></b>		
<b><i>VI</i></b>	<b><i>Visual and Performing Arts (4 Credits)</i></b>		

FRESHMAN YEAR

<i>Fall Semester</i>	<i>Winter Semester</i>	<i>Spring and/or Summer Session</i>

SOPHOMORE YEAR

<i>Fall Semester</i>	<i>Winter Semester</i>	<i>Spring and/or Summer Session</i>

JUNIOR YEAR

<i>Fall Semester</i>	<i>Winter Semester</i>	<i>Spring and/or Summer Session</i>

SENIOR YEAR

<i>Fall Semester</i>	<i>Winter Semester</i>	<i>Spring and/or Summer Session</i>

GRADUATE

<i>Fall Semester</i>	<i>Winter Semester</i>	<i>Spring and/or Summer Session</i>